THE LANCET.

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SURGICAL LECTURES.

Theatre, St. Thomas's Hospital,
MONDAY EVENING,
April 26, 1824.

LECTURE 58.

THE first subject on which I shall this evening engage your attention is, enlargement of the prostate gland. There are three species of disease, exclusive of the formation of calculi, by which this gland is affected; now the one which I shall first describe to you, is

Acute Inflammation of the Prostate Gland.

This complaint is not confined, like the chronic enlargement, to late periods of life, but attacks persons of any age, and generally terminates in suppuration. The most prominent symptom which characterises this complaint is violent pain immediately after discharging the urine, and in this respect the disease resembles stone. As the inflammation advances, the swelling of the prostate produces retention of urine; this may be relieved by a common catheter, it will answer the purpose well, and for this disorder the prostatic catheter will not be necessary.— Well, having passed a catheter, matter comes away through it, and the person for a time will be relieved. The

Medical Treatment of Acute Inflammation of the Prostate Gland,

Consists in taking blood from the arm, and administering mild laxatives, together with antimonial medicines. Generally speaking, the disease is not so clearly manifested by the symptoms as to satisfy your mind of its true nature, until the matter escapes by the catheter; this, coupled with the other appearances, stamp its true character. Rigors do not attend the formation of this matter. The next kind of enlarged prostate, that I

shall describe to you, may be called

The Chronic.

It is the consequence of age and not disease; when this affection produces partial retention of urine, it should be considered as a salutary process, for it prevents incontinence of urine, which, in old people, would be almost constantly taking place, were it not for this preventive. It makes the urine pass slower than natural; but this may be excused when it is the means of preventing a continual wetting of the clothes. Well, then, the first circumstance by which you know that an old person has chronic enlargement of the prostate gland, is the length of time he requires for the purpose of voiding his urine. You all of you must have observed that an old gentleman is twice as long, when engaged in this process, as a young one, and this is the first thing that attracts the patient's attention. Well, the next thing noticed is, that the urine becomes of a particularly powerful smell; this arises from its being ammoniated, in consequence of some urine remaining in the bladder after each discharge; remember therefore, that in this complaint the whole of the water, each time it is attempted to be expelled, does not pass away. The next symptoms observable, are pain and numbness in the glans penis;—the prepuce not possessing its usual sensibility--sense of weight and uneasiness in the perinæum, which are relieved with pressure by the finger—pain in the back of one or both thighs, in the loins, and at the origin of the sciatic nerve and course of the ureters—the feces are flattened, the reason of which is, that pressure has been made upon the rectum by the swoln gland. Persons having enlarged prostate for any length of time, generally have likewise prolapsus ani and hemorrhoids; when the enlargement of the gland is considerable, the patient will kneel, resting upon his hands with his knees widely distended, and thus continue for a tedious time to pass only a few drops of urine, after the most persevering efforts, and in the most excruciating pain. Besides, what I have already stated, the ammoniacal smell of the urine, as the disease advances, becomes highly offensive, and at length the urine itself becomes white or milky; this appearance shews

that the inflammation has extended to the mucous membrane of the bladder. If the urine be retained much, it has the appearance of coffee, occasioned by an admixture of blood with it; this leads many practitioners to suppose for the moment that the case is one of stone; but if you question the patient for a few moments, your doubts on this point will be removed. If you desire him to stand up and jump firmly on the floor, he will do so; if you ask him whether he can ride over a rough road without much pain, he will tell you that he can; such doings and replies as these you would not obtain from a patient with stone.

At length the enlargement of the prostate in many cases will proceed until it occasions complete retention of urine; this, however, may be the effect of retaining more urine in the bladder, and for a longer period than it ought, or it may have been the result of checked perspiration, either from cold weather, or from having imprudently laid aside some flannel covering; when the retention has been brought about by either of these latter mentioned causes, in conjunction with an enlarged prostate; exciting on such persons violent perspiration will often afford a means of relief.

When you introduce a catheter into the bladder of a patient having chronic enlargement of the prostate, you will find the urine of a very high colour, and of an exceedingly offensive smell. Well, then, such are the symptoms which accompany this kind of enlargement of the prostate gland; at least they are such as I witness. Upon

Dissection.

Of those who have died with this disease, and without dissection, we know nothing at all of the matter; the prostate is found enlarged sometimes laterally, but most frequently the enlargement is in the posterior part, situated in the middle or third lobe. Well, as the prostate enlarges it becomes pushed forward, and in consequence of this the urethra becomes curved immediately before the apex of the prostate; indeed, the coming forward of the prostate causes the urethra almost to double upon itself; the curve thus formed is situated at the symphysis pubis; it is in this situation that the difficulty is found

on passing the catheter in diseased prostate. Well, tracing on the course of the urethra, that canal behind the curved part is seen much enlarged—the next thing we notice is that the urethra itself is considerably elongated, that is, from an inch and half to two inches; this increase of length is behind the pubis and it is owing to this circumstance that you are under the necessity of carrying on the catheter so great a distance after its point has passed the arch of the pubis. Well, then, as to the prostate itself we find that it may increase to a most enormous size laterally without giving rise to retention of urine. But that enlargement which occurs posteriorly in the third lobe (and which you have an opportunity of observing in the preparation now passing round the theatre) frequently occasions retention of urine, for the enlargement is situated immediately behind the orifice of the urethra, thus the urine collects behind the swelling, presses it upon the mouth of the urethra, and forms a complete barrier to its passage. It is of great importance for you to understand this; indeed a correct knowledge of the morbid anatomy of the parts is altogether of consequence because if you have not this information you would find the greatest difficulty in the introduction of the catheter, whereas if you possess it there will be no difficulty at all, and the urine may be drawn off with the greatest facility. It was owing to the imperfect knowledge of the anatomy of these parts that retention of urine formerly proved so often fatal, which occurrence is now very, very rare; the reason is that within the last forty years frequent dissections have caused these diseases to be well understood and an improved mode of treatment has been the result. Well, then, although the enlargement of the middle lobe of the prostate will give rise to retention of urine by plugging up the orifice of the urethra, yet the lateral enlargement, although of great magnitude does not occasion any such effect. That you may be enabled perfectly to comprehend what I have been stating to you, I will send round for your inspection different specimens of the diseases which I have noticed.—(The learned Lecturer here delivered several preparations to the students.)

Well, Gentlemen, behind the prostate we frequently find sacs

formed in the coats of the bladder, here is a preparation in which you see nine; here is another with I believe as many; these sacs are produced in the following manner: the muscular fibres of the bladder give way, and between these fibres the mucous membrane protrudes; thus in reality the sacs are elongations of the mucous membrane.

We also find the bladder much enlarged in this disease; the ureters, likewise, and also the pelvis of the kidneys.

Well, then, when diseased prostate exists, how are you to know it? what are the diagnostic signs? why, the enlargement laterally may be readily ascertained by introducing the finger into the rectum, but the enlargement of the middle lobe cannot be so learnt. Well, then, how? why, by the introduction of a catheter or bougie, and the latter is the best; it will be found to stop suddenly; for the purpose of drawing off the water you are then to introduce a catheter; the instrument will be resisted in its common course, and you must depress the handle exceedingly, with a view to tilt its point over the enlarged gland, thus the end of the instrument will be rising perpendicularly, as it were, behind the pubis.

These, then, are the means you are to employ to obtain a correct diagnosis. Now, with regard to the cause of retention of urine, in those cases of enlargement of the prostate where the disease exists in the third lobe, it generally arises from the urine having been allowed to remain in the bladder for too long a period, thus collecting in so large a quantity that the swollen lobe is pressed forward against the mouth of the urethra and thus closes the entrance to that canal.

With regard to the causes of enlargement of the prostate, it is often the result of libidinous age; old people frequently feel a greater degree of excitement than the constitution is capable of supporting, and disease is the consequence; powerful excitement is by no means desirable for aged individuals. I shall next proceed to consider the

Treatment of enlarged prostate.

Very little can be effected here by medicine; it is a disease over which medicines have but very slight influence; you may however give the oxymuriate of

mercury in very small quantities, for I believe that I have seen it produce a beneficial result. But this is the treatment only for the enlargement of the gland; well, but when retention of urine takes place what plan of treatment are you to adopt then? When no urine whatever can be passed, and when there is great pain at the neck of the bladder? Why you must take blood from the arm, apply leeches to the perinæum, administer purgatives, and put the patient into a warm bath

If these means should succeed in procuring relief, the best medicine that can afterwards be given for the purpose of preventing a return of the retention, and at the same time with a view of lessening the inconvenience which sometimes attends the complaint, is composed of fifteen drops of the liquor potassæ, five drops of bals: copaib: and an ounce and a half of mist: camphor: If you give fifteen, or twenty drops of the balsam, it then produces a stimulating effect, and does harm; administer it in the quantity that I have just mentioned to you, in conjunction with the other medicines, to which you may add ʒij. Mucilag: Gu: Acac: I was attending with Dr. KEY, a gentleman from the country, having this disease, and in whom it proved a source of much annoyance; we at first gave him ten drops of the balsam, with the other medicines; this quantity, however was found too stimulating, the dose was reduced to seven drops, and ultimately to five; after continuing it for a short time, we had the pleasure of sending this gentleman back to the country very much relieved; this medicine is by far the best remedy for this complaint that I am acquainted with. Other medicines, as the carbonates of soda, and magnesia, the liquor potassæ, and opium, are occasionally given, but as the latter produces costiveness, it is decidedly improper. I can assure you with much confidence, that the first medicine I described to you, will be found the best. It will afford considerable relief, which is all that you can expect, for you must not dream of obtaining a cure. When you are called upon to relieve retention of urine, from enlarged prostate, by the introduction of a catheter the instrument should be fourteen inches in length, and a

quarter of an inch in diameter. In consequence of the pressure within, a broad instrument will answer better than a narrow one, for being bulbous at the end, it will readily ride over the enlargement. When introducing the catheter, you will meet with no difficulty until you reach the curve, which the enlargement of the gland has produced in the urethra; the handle of the instrument is to be here slightly raised, for the purpose of insinuating the point through the curved part; having passed this, you are then to depress the handle completely between the thighs, so as to bring the point of the instrument immediately to rise perpendicularly above the the pubis. Well then, that is the whole of the difficulty of introducing the catheter in this disease more than is experienced under ordinary circumstances; recollect, after having passed the curved part of the urethra, the situation of which I have already explained to you, you are then to depress the handle as much as you possibly can; this will cause the point to enter the bladder between the pubis and enlarged lobe.

If any gentleman within these walls should ever be under the necessity of puncturing the bladder for enlarged prostate, which I trust in God he will not, it must be done above the pubis, but it never need be attempted at all, if you can perform your duty. I have known enlarged prostate occasionally occur in very young people; an instance of this kind happened in the other Hospital; a boy was admitted, having symptoms of stone; but before I say more of this, while I think of it, I want to add a few words on the treatment of diseased prostate. An elastic gum catheter is sometimes kept introduced into the bladder; in passing an elastic gum catheter the removal of the stilette wil sometimes cause it to enter with ease, when it would not previously pass at all. If it be deemed requisite to leave the catheter in the bladder, I should prefer one of pewter rather than elastic gum, for it can be curved down before the scrotum, and by plugging up the end, the patient may move about as he likes and at any time he wishes can expel his urine; thus the instrument becomes productive of great comfort; let me observe to you, that if you employ a pewter catheter, it should be quite new,

and not worn for a longer period than a fortnight, for the urine acts upon the metal, renders it brittle and will probably cause the instrument to snap if the time be extended beyond what I have stated. I just now mentioned to you, in reference to young persons having enlarged prostate, that a boy was admitted into the other Hospital, having symptoms of stone, in consequence of which he was sounded, and the operation of Lithotomy, was going to be performed; the sounding however, brought on inflammation of the bladder, which terminated in the boy's death; upon dissection it was found, that the symptoms for which he had been sounded were produced by an enlarged prostate gland. I have one other observation to make; persons will come to you for some supposed complaint in the bladder, and upon inquiry, they will tell you, that they can pass their urine; now, if the disease consists of enlarged prostate, some urine will still remain; desire them, therefore to make water, and then introduce the catheter; if the case be one of enlarged prostate, you will be enabled to draw off, from half a pint, to a pint of urine, having a strong ammoniacal smell. A Gentleman about six weeks since, called upon me, whose case was similar to what I have just stated; upon inquiry as to whether he had passed his urine, he told me, he had just done so; upon introducing the catheter, I drew from his bladder a pint of urine, having a highly offensive ammoniacal smell; you have only to teach a patient who is thus circumstanced how to introduce the catheter for himself, and his danger will be at an end.

The last circumstance connected with the prostate which I have to mention to you, is that you will sometimes find

Fungous Polypi

growing from its base. Here is a preparation in which you have an opportunity of seeing the nature of the disease, and here is another of the same description; this specimen was taken from a man who lived in the neighbourhood of the hospitals. A catheter was passed into the bladder of this man, in consequence of retention of urine.—For nearly the whole of the day on which the instrument was introduced, he expelled nothing but blood—other at-

tacks succeeded this, and at length he died. The preparation now before you, was taken from his bladder. I am not aware of any plan of treatment that is likely to be successful for the removal of this disease; it appears to be entirely out of our reach.

LONDON COLLEGE OF SURGEONS.

COURT OF EXAMINERS.
MR. ABERNETHY,
SIR WILLIAM BLIZARD,
MR. CLINE
SIR ASTLEY COOPER,
— DAVID DUNDAS,
MR. FORSTER,
SIR LUDFORD HARVEY,
— EVERARD HOME,
MR. LYNN,
—NORRIS.

In a late number we called the attention of our readers to one infamous bye-law of this body, and have now to notice another, which was passed in the beginning of last year, not less atrocious or mischievous: we allude to the following.

"Candidates for the diploma will be required to produce, prior to examination, a certificate of having regularly attended three courses at least, of anatomical lectures, *which have been delivered during the winter season*; and also one or more courses of chirurgical lectures in LONDON DUBLIN, EDINDURGH or GLASGOW." In our last article we briefly noticed that the College as it is now constituted, is not likely ever to pass any measure which will benefit the profession; we intend at present to bring the above regulation as another proof of the principle we then laid down, by shewing the reasons which induced the Court of Examiners to pass it; and before we have done we shall also prove that this bye-law as well as the one we last examined are both illegal. In order clearly to point out the real object of this measure, we have a few observations to premise. It must be recollected that nearly all the examiners have been, and that five out of the ten are still, hospital surgeons; that the anatomical lectures delivered at the hospitals with which they are connected are only delivered during the winter season, while there are other teachers unconnected with these institutions who give lectures on anatomy during the summer—what step do the examiners (two of whom are anatomical lecturers) adopt? Why, endeavour to crush the men, who oppose them or the schools in the support of which they feel an interest, by passing

a bye-law which enacts that a student shall have attended three *winter courses* of anatomical lectures prior to his examination for a diploma, thereby rendering an attendance on lectures delivered during the summer, by the teachers who are opposed to the schools with which the examiners are connected, of no use as far as regards passing the college; it should also be particularly borne in mind, that at the time this regulation was passed, the very existence of the anatomical school at St. Thomas's was endangered by the successful opposition of another school, the one possessing a teacher (Mr. Green), at that time unpopular and disliked by the great body of the students, the other being conducted by a man (Mr. Grainger), universally esteemed. Bearing these facts in mind, it will be immediately perceived, what induced the examiners to pass this regulation to diminish the force of the opposition directed against the school, or schools, in the support of which some of them were directly, and all indirectly, concerned. We ask any man of common sense, whether this measure does not prove to demonstration the truth of what we have asserted, that no good law or regulation can ever be expected to emanate from the college, as it is at present constituted, for the very moment one or two schools, in opposition to those with which the examiners were connected, began to flourish, an order was issued by these men, the object of which is to subdue, by the arm of the law, what they or their dependants were unable to do by free and open competition. The man who robs another on the highway to satisfy the wants of hunger deserves some commiseration, but the conduct of men who enact certain measures, under the pretence of promoting chirurgical knowledge, yet with no other view than to defeat the exertions and, perhaps, ruin the prospects of individuals engaged in honourable opposition to them, admits of no palliation.

Seriously as this measure affected, at the time, those gentlemen who were in the habit of delivering anatomical lectures during the summer, still the evil inflicted on the profession, and chirurgical students in particular is by far the most serious, and that which should engage our attention. The evils arising from this measure to surgical

students are the unnecessary *delay* and *expence* which it occasions in the study of their profession—it compels them to spend more time in town than may be convenient, and to expend more money than many may be able to afford, thereby increasing the already too numerous impediments that are thrown in the way of acquiring chirurgical knowledge. We have no desire that surgeons should be allowed to practise before they possess the requisite degree of information, but then the test of their knowledge should not be determined by the quantity of time and money employed in obtaining it, but by something more effectual, a test which shall shew whether they really possess or not the proper information. The measure, moreover, is unequal in its operation; it is placing the capacities of all on the same footing; it is forcing the man who is quick in the acquisition of knowledge to spend as much time in obtaining it as he who is dull and stupid. But this objection applies to all the regulations which require that so long a time should be spent in the study of the profession before a candidate for a diploma can be examined, therefore we will leave the consideration of it for the present and consider the legality of the bye law; we think it can be shewn that this and the one we previously commented on, are both illegal.

It is a general rule, in law, that a corporation by charter cannot make bye laws inconsistent with the intention and object of its character,* but ought to frame every law so as to advance the object of the charter.† Now the object of the charter of the ROYAL COLLEGE of SURGEONS in LONDON, as stated in the preamble, is the promotion and encouragement of the science and practice of Surgery. What can be more directly opposed to its intentions than a measure increasing so much as this does the expence of a Chirurgical education? We shewed when considering the former bye-law, that the freest competition would be the best means of promoting chirurgical science. This bye-law has a strong tendency to lessen competition; it drives out of the competition all those who cannot afford the additional expence created by the measure.

* Rex. v. Cutbush 4. Barr. 2204.
† Bac. Ab. Bye law.

Unfortunately too, the effect of every addition to the necessary expence of a surgical education, is, to exclude from the profession the very men who would be most likely to exalt the science. The science of surgery, like every other science, is to be acquired by industrious application—and by industrious application only. Who is likeliest to bestow the necessary labor? he who is poor, or he who is rich? he who has the strongest motives to exertion, or he who has scarcely any? he who has nothing but his professional abilities to trust to for existence, or he who is independent of them?—Surely he who is poorest, and who has consequently the most powerful incentives to application; and this is the man who will find himself excluded from the profession by this regulation.

Another rule of law is that every bye-law to be valid must be reasonable in itself;* it must also be for the common benefit of the corporation, and not for that of a particular member or set of members only.*

Is it "reasonable in itself" that every student should be put to a £100 expence and be considerably delayed, in order to put money into the pockets of the examiners of the college? Is it for the benefit of the *whole* corporation that the power of lecturing should be confined to a few priviledged individuals? Whythe Examiners make these regulations is obvious enough. This junta consists as our readers well know chiefly of hospital surgeons, some of whom lecture during the *winter*. Here then is the reason for the preference shewn to hospital surgeons and *winter* lectures. The object of the bye-law obviously is to compel all students to attend their lectures, however superior those of any summer lecturer may be—in fewer words their object is to put money into their own pockets let chirurgical science fare as it may. What other reason can they possibly have for making these regulations? Will they tell us there is something in the nature of chirurgical science which prevents its being taught in *summer!* Is it so rare as to require condensation by the frosts of *winter* to fit it for conveyance to the minds of the students? Or do the worthies of the College intend to assert that nobody is or can be in

* Bac. Ab. By-law.

* City of London v. Vanacker, L.D Raym. 498. Goldsb. 79. Bac. Ab. By-law, 949. Rex. v. Cutbush. 4. Barr. 2018.

possession of it but themselves, and consequently that none but themselves can teach it ?

The King himself has not power to create a monopoly in favour of any person, yet this junta of petty tyrants arrogate to themselves the power of creating a monopoly and that too in their own favour !!!

Neither of the two bye-laws we have more particularly considered, have yet, we believe been ratified and confirmed by the Chancellor, Lord Treasurer or Chief Justice, or three of them pursuant to the statute 19th Henry VII. c. 7. The College is therefore liable to a penalty of forty pounds for each law made without such consent. We hope the Chancellor Treasurer and Judges will not be prevailed upon to ratify them, but if they do confirm them the question of legality will remain just where it is: for it has been decided that the approval of the Chancellor "doth not corroborate any of the ordinations made by any corporation but leaves them to be affirmed as good or disaffirmed as unlawful by the law, the sole benefit the corporation obtains by such an allowance is that it shall not incur the penalty of forty pounds."

We some time since recommended the profession to petition Parliament to abrogate the present, and grant them a new charter, which might so constitute the college, that the persons, having the power of making bye-laws should be elected by the whole body of the members of the College.

This recommendation we now most earnestly renew. Such a measure will be equally necessary, whether these odious bye-laws are put into execution, or annulled either by the Chancellor's and Judges refusal to confirm them, or by the Examiners themselves. For, as the College is at present constituted, it is not in the nature of things that any measure beneficial either to the profession or to society at large can emanate from it. It is an invariable law of human nature, that every man will, if he can, promote his own interest in preference to that of others; we may deplore the existence of this law; we may endeavour to hide it from ourselves; but we cannot alter it.

Wherever the power of making regulations for the government of a large number is placed in the hands of a few, this few can only be prevented from em-

ploying that power to promote their own sinister interests by the control of the large body. The only security we can have that they will exercise their power for the general benefit, is their being both elected and removeable by thosewhom they are to govern. The two bye laws we have been considering are proofs, if proof were necessary of the truth of the proposition that all men follow their own interests. These and most of the regulations which have emanated from this body, are calculated to promote the interests of the bye-law-making few, at the expence of the interests of the profession and of society in general. In most of them the promotion of Chirurgical Science on which the health and happiness of society so much depend, is, as might be expected, sacrificed to the cupidity of the few in power.

To increase expence, to diminish competition, and thus to retard the progress of science in order to put money into the pockets of the Aristocracy of the College, are the only effects of many, perhaps of most of the bye-laws of the College.

CHEMISTRY.

As we have in our previous numbers stated ourselves to be unbelievers in the present theory of Heat, we deem it but fair to follow the subject by stating to our readers what our private opinion on this may be; and we fully intended doing so in this number of our journal, but on preparing the subject for the purpose, we find that we cannot satisfactorily convey our opinions without first noticing some facts connected with the radiation and conduction of heat, and also with electrical temperature. We are therefore obliged to postpone it until we shall have noticed those further phenomena of heat, which will be necessary to be referred to, in support of our doctrine. In regard to these phenomena we shall first notice, the "*Conducting power of bodies.*" Experiment teaches us, that different substances conduct heat in different ratios; in other words, some substances permit or allow heat to pass easily through their bodies, while others will scarcely allow it to pass at all. These latter substances are called "good conductors of heat," while those which pass it with difficulty are called

"bad conductors of heat." If we take a rod of iron, and another of glass, and place the end of each in the fire, or in hot water, we shall find in a few minutes that the iron will be heated throughout the whole length of the rod, while the glass will scarcely have been increased in temperature beyond the point of contact. As the iron in this case becomes hot by allowing the heat to pass through or by its particles, the iron is said to be a *good conductor* of heat; while the glass refusing to suffer the heat to pass is said to be a *bad conductor*.

The conducting powers of bodies vary in almost every substance in nature, and frequently, when the other properties of any two substances are alike in every other respect, they differ in this; it is, therefore a subject which requires some attention by the practical chemist, and particularly by the experimental physiologist.

The relative conducting properties of bodies are said, like expansion, to be governed in some degree by their respective densities—the denser body conducting better than the rarer:—for instance, the metals are known to conduct heat better than wood, wood better than feathers, feathers better than down, down better than air, &c. This effect, however, is not general; in fact, the experiment above noticed with the iron and glass rods, prove the contrary; for glass is a denser body than iron, and yet we find it a worse conductor of heat. Cases so often occur, where rarer bodies conduct heat better than denser ones, that we are just as much disposed to adopt a contrary opinion respecting this law, as we have seen in regard to that of "latent heat," and all that we can say practically on the subject is, that *density* has little or nothing to do with the conducting property of bodies. We shall, therefore, pass on to notice some of the facts connected with conduction, which may be more valuable.

All the metals conduct heat readily, but in different ratios with respect to each other; copper and silver perhaps conduct heat better than any of the other metals, and platina the worst. The woods differ very much also in this respect. Liquids are stated by Count Rumford not to conduct heat at all; this however is incorrect; they conduct heat in every direction, although very badly. Æriform bodies conduct heat rather worse than either; and hence the reason why plates or strata of air are made to surround ice-houses, viz. to prevent the external heat from entering and melting the ice in summer. We find that a curtain placed at a small distance from a window in the recess, so as to preserve a still plate of air between the room and glass, will render the room comparatively warm in winter; and in summer the same plate of air will keep the room cool, by preventing the heat from without, from entering the apartment. Double windows are preferable for this purpose, because they do not intercept the light; but we find that thin curtains are not inconvenient, and they act most perceptibly in regulating temperature.

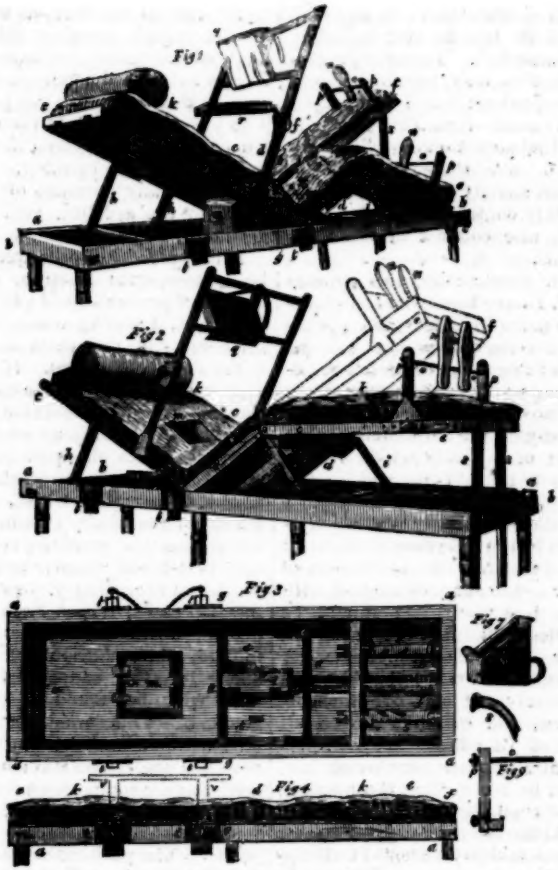
It is stated that "heat is the *lightest body* known; therefore it always has a tendency to ascend." We would rather say that *heated particles* of any matter whether of a solid, liquid, or æriform be-

come specifically lighter by expansion, and therefore will rise when heated in a medium consisting of particles of similar specific gravities with themselves; as for instance, when some of the particles of water are warmed in a medium of similar particles, these heated particles will rise through those that are not so; and thus we find that hot water always rises to the surface of a vessel of cold. The particles of air which are heated in the atmosphere, always ascend and fly upwards, because they are expanded by the heat, and therefore rendered lighter than those around them, but if atmospheric air be heated and thrown into a volume of hydrogen gas, they will not rise, nor will the "heat ascend:" simply because the heated particles of atmospheric air remain still specifically heavier than the hydrogen gas. So also, notwithstanding hot water rises to the surface of cold, yet it will not rise through the atmosphere, unless indeed it be so far expanded as to be converted into steam or vapour, in which case it is found to be specifically lighter. We may fairly conclude that in every case where heat appears to ascend, that it is not a property of heat itself, or the levity of its nature, but that it simply expands either the particles of some liquid, or air, which become specifically lighter than they were before, therefore rise upwards and carry the heat which they have acquired along with them; therefore, instead of saying that "heat is the lightest body known," we may with more propriety observe that heated particles of common matter are lighter than cold ones.

We are particular in exposing these errors, because they mislead the followers of truth and injure the true interests of science by impressing false notions on the mind, which are carried with all their baneful effects into every inquiry, and prejudice, as we every day see, even the results of experiments themselves.

Agreeably to the above law, water and other fluids are heated under common circumstances, by first heating the particles which are at the bottom of the vessel and in contact with the source of heat; these become specifically lighter by this means, and consequently rise through the fluid above to the surface, they are succeeded by another set of particles, by a third, &c., which heated, pass up in the same way, until the whole becomes of a given temperature. The heating of water is effected not by its conducting power, but by a change of gravity and situation. A piece of iron placed upright on the fire would, on the contrary be heated by the *conducting* property of iron, and not by a change in the situation of its particles, because they are solid and immoveable.

When liquid particles are compressed into solids they then conduct heat rapidly:—it is only their easily moveable state that appears to render them non-conducting bodies. As heated particles are lighter, and rise among cool ones, we may expect that cool ones will consequently fall amongst warm ones, this is really the case, and proves the reason why some situations near the sea are comparatively warm during the winter season.



MR. EARLE'S FRACTURE BED.

Directions for using Mr. EARLE'S *Fracture-bed.*

DURING long confinements to bed, particularly when it is necessary to preserve the same position for weeks and even months together, it is of essential importance to the comfort of the patient, and often to the success of the practitioner, that great attention should be paid to render the bed as permanently level and smooth as possible. This I consider of so much consequence as to merit the attention of the surgeon, who ought never to place a patient under

such circumstances on *any* bed, until he has himself minutely examined it. To some gentlemen this may possibly appear unnecessary; but I can practically assure them, that this little preliminary trouble will very often save them much subsequent anxiety and vexation, and mainly contribute to the happiness and comfort of their patients.

In constructing this apparatus, I have bestowed considerable pains in endeavouring to alleviate the sufferings of persons labouring under complicated accidents and diseases; in doing so, however, I have by no means exempted the surgeon from that part of his duty which I have before alluded to, and in the employment of this bed, I would particularly call his attention to the following directions: The mattress should be made of horse-hair, or well stuffed with the best wool, and should be nailed round its edge to the upper division of the frame. A blanket and sheet should be separately stretched over the mattress, and carefully sewed all round its edges: this will prevent any subsequent wrinkling, and by sewing first the blanket, and then the sheet, it is obvious that the latter may, if necessary, be detached without at all disturbing the former. The whole apparatus is made narrow, both to facilitate the operations of the surgeon and nurse, in dressing or cleansing the patient, and to prevent him from shifting from the central aperture. Half a blanket, and a single breadth of sheeting will in all cases be sufficient; and in fitting them to the central aperture, as well as the spinal opening when used, it is far better only to make a cross cut from the four corners thus ✕ than to remove any part. The loose edges should then be turned down, and sewed at the lower part of the opening. By this plan, any hardness of the edges of the aperture will be avoided.

If the case about to be treated be a compound fracture, and there is a probability of profuse discharge, it will be well to add some oil silk, or a draw sheet, under the part affected. If the disease be a disease of the spine, the trap door and moveable pad should be accurately adapted to the part before the patient be placed on the bed. In fractures of the lower extremities, the length of the limbs should be taken, and the central portion and foot-board lengthened or shortened accordingly. In complicated cases, where both upper and lower extremities are injured, the addition of the shelf for the support of the arm will be found a great comfort. This was employed with advantage in the case of Turner, who was chaged with having committed a forgery on the Bank of England, who fractured his elbow and hip-joints. The position best adapted for fractures of the thigh, is shown in the right division of figure 1. The same will be found best for affections of the spine and hip-joints.

The position shown in figure 2, with the lower division horizontal, is the one in which I have placed compound fractures of the leg.

In fractures of the knee-pan, it may be elevated, as shown in the left division of fig. 1, and by the dotted lines in fig. 2, in order to relax the powerful muscles in front of the thigh.

In placing a patient on this apparatus, care must be taken to fix him with the nates directly opposite the central opening, and the nurse should be directed to be very careful to introduce the proper utensil, so as to come in contact with the patient. It occasionally happens, that at first patients experience a difficulty in performing their natural functions in the recumbent position: this will soon be overcome, by raising the upper division a little. In some rare instances, I have found it necessary at first to employ a catheter; but this difficulty is far greater when any other apparatus is employed, and, generally speaking, the proper employment of this bed will obviate it altogether.

Description of Mr. Earle's Bed for Invalids.

The apparatus consists of a strong fixed frame *a a*, which is rabbeted, as shown at *b b*, figs. 1 and 2, to receive a moveable one of the same length, but about 3 inches narrower. The moveable frame is divided into three parts, connected by joints; the superior one *c c*, is the longer, and is intended to support the head and trunk. The middle division *d d*, which is the shortest, is adapted to the thighs, and is capable of being lengthened, or shortened. The inferior one *e e*, *f f*, is intended for the legs. This latter part is divided up the middle, for the convenience of varying the position of either leg, as shown in fig. 1. The right division *e e*, is the proper position for fractured thighs; the left division *f f*, for fractures of the knee-pan. The moveable frame is connected with the fixed one by means of the iron pivots *g g*, which turn in the sockets, which are screwed to the outer frame, at the junction of the upper and middle divisions. Different degrees of elevation may be given to the different divisions by props, one *h h*, under the upper, the other *i i*, under the middle division. These props work in racks at the bottom of the rabbet *b b*, of the fixed frame *a a*. The two portions of the inferior division *e e*, *f f*, are maintained in their different elevations, by means of the wooden uprights or props *s s*, which are fixed to the upper frames, by hinges formed with two staples or iron rings. These props are notched at one side, at given distances, and can be dropped upon the screws, which are fixed to the inside of the fixed frame, as best seen in fig. 3. The whole moveable frame is boarded over, and should be bored with numerous gimblet holes to admit air, and prevent the perspiration from rotting the bedding. A well-stuffed hair or wool mattress *k k*, figs. 1, 2, and 4, is fitted to this, which is nailed to the edge of the upper and middle divisions, but left free at the lower division, to enable the apparatus to be fitted to limbs of different lengths. The central division *d d*, has a

long narrow trap door *l*, about 3¼ inches wide, and a foot long which can be let down for the admission of the proper utensils, figs. 7 and 8, fitted to the opening. The mattress at this part has a corresponding vacancy, which is filled up, when not used, by a pad adapted to the opening. A similar trap-door and moveable pad may be made in the superior division at *m*, for the convenience of dressing issues or seton in cases of diseased vertebræ, where the slightest motion of the body should be avoided. The situation of the latter opening, and its length, must vary according to the part affected in the individual to whose case it is adapted; but it should not exceed six or seven inches in width, for fear of taking off too much of the support of the body. When the spine is in a very tender state, the firm pad should be exchanged for a softer one, made with feathers. The rest of the apparatus consists of two pieces of wood *n n*, shaped like the soles of the feet, through which an iron rod *o o*, passes, which is affixed, by two thumb-screws, to two uprights, which rest by a broad base on the edge of the inferior division *e f*, and are confined in their situation by screws, which fit into iron plates, with holes at the interval of one inch to adapt it to legs of different lengths. To these foot-boards the feet are firmly fixed in fractures of the lower extremities, and in most cases this will supersede the use of splints. A reading-desk *q*, and swing table *r*, have been subjoined for the additional comfort of patients. These are attached to the upper frame, in the same way as the uprights of the foot-boards. The reading desk will support a book over the patient's head, without any effort on his part, as seen in figs. 1 and 2. On each side of the fixed frame, in figure 4, iron sockets *t t*, are affixed to receive the uprights *u u*, which support the shelf *v v*, which is intended to support the arm and fore-arm, in case of a complicated injury to the upper and lower extremities: this may be raised to different elevations, and retained by pins passing through the uprights into the iron sockets.

Fig. 1 shows the apparatus complete, with the reading table. The trap-door for the spine is left open, and the two portions of the inferior division are placed at different elevations; that on the right side is the position for fractured thighs, that on the left for fractured knee-pans.

Fig. 2 gives another view of the apparatus, showing the situation of the central opening, and the inferior division in the horizontal position, adapted to fractures of the leg.

Fig. 3 shows the under side of the apparatus, with a view of the whole mechanism by which it is worked.

Fig. 4 shows the apparatus when not in action.

Fig. 7, the utensil adapted to the size and angle of the central opening.

Fig. 8, urinal for men, particularly in cases of paralysis of the bladder, accompanied with incontinence of urine.

Fig. 9, side view of the upright which supports the foot board.

Foreign Department.

On the Treatment of Traumatic Tetanus.

By M. CRUVEILHIER, Revue Medicale.

Wound of the thumb; sharp pains; trismus; stiffness of the thumb; difficulty of breathing; convulsive movements. Blisters; opium; leeches-

warm baths; cathartics increase of the symptoms; inspirations regulated according to time; cathartics; gradual amelioration; cure.

I was called, on the 29th of last April, to Fargeas, a village situated about a mile and a half to the east of LIMOGES. I found a man, twenty years of age, extended on the bed, with the face downwards, he could not bear any other position; the face presented a peculiar appearance of contraction, or permanent laughing, which is called the *tetanic smile* or *risus sardonius*. The articulation of sounds was slightly altered; deglutition difficult, and was only able to swallow by taking small quantities at a time, which was occasionally followed by cough and painful expectoration of mucus. I asked him if he could sit on the bed, he made a sign to his father, who lifted him by the shoulder and placed him in a sitting posture; he was afterwards assisted in getting to the floor; he walked a few paces with the body half bent forwards, and without his being able to attain the erect position. As he proceeded, he had some slight convulsive motions, ... a quick but involuntary contraction of the diaphragm, ... a slight elevation of the trunk. Whilst these were present, it appeared to me, that the abdominal parietes passed against the spine, and that his breathing was intercepted in this way. The sterno-cleido mastoidei, the cervical attachments of the splenic, the complexi, the muscles in the immediate neighbourhood of the os hyoides, and the abdominal muscles, together with those of the spine in the dorsal region were painful; the masseters were not so at all; the superior extremities were quite free, the inferior a little stiff. Pulse full, but natural as to its frequency. I saw the thumb covered, and I enquired the reason. Twenty-three days ago, whilst cutting a large branch of a tree, the ladder which supported him, being badly fixed slipped; he laid hold with one hand of the branch which was not quite divided, and the last phalanx of the thumb of the other was caught in the cleft and severely jammed. During three days he had acute pain, which after that time left him. On the eighteenth day from the accident, pain came on in the right side of the chest, which disappeared by means of an embrocation and went to the dorsal portion of the spine and the abdominal muscles; the jaws were at the same time firmly closed; he got up every day, but the stiffness of his trunk and difficulty of breathing went on increasing; a blister was then applied between the shoulders.

From all these symptoms I could not but recognize a case of traumatic tetanus. But what was the cause of it? The season was fine; the patient had not been subjected to changes of temperature. A broken pane of glass directly opposite to his bed might have caused it by exposing him to a draught of air. I prescribed four grains of opium in four pills, one of which was to be taken every three hours; fifteen drops of nitrous æther in a glass of spring water. The finger was dressed with opium cerate.

On the 30th, six days from the first appearance of the com-

plaint, I found him a little better. The patient greatly praised the nitrous æther, which made him bring up a good deal of wind by the mouth. The opium had procured no rest. I increased the dose to six grains in twelve hours; same drink as yesterday: warm bath morning and evening, the patient to continue in it for several hours. Copious perspiration whilst in the bath, and also felt a little better, but very weak.

May 1st.—Increase of the stiffness of the trunk; the convulsive motions stronger, more frequent, and accompanied with a whining noise, and marked elevation of the trunk. Skin constantly moist, although the patient is very slightly covered; medicines to be continued.

2.—Muscles of the neck more painful, deglutition more difficult. The baths and opium to be discontinued; but the nitrous æther in water to be taken as before; twelve leeches to the parts of the neck where the pain is most violent; these bled a good deal and relieved the patient. Movements of the head less painful; slept an hour and half for the first time during the last eight days.

3.—Twelve leeches in the dorsal region; relief not so great as that obtained yesterday, although the same quantity of blood was abstracted.

4.—Appeared to be beyond all hope. He seemed as if he were in the last stage of this frightful disease; the pulse small and quick; cold clammy sweat all over the body: convulsive motions in rapid succession; much more violent, and longer in their duration, with a more marked and painful erection of the body, and a stoppage of the breath (something like the hiccup) during a quick inspiration. The least motion or noise, or the slightest exertion in elevating the trunk or turning the head, either to spit or open the mouth, all brought on the convulsions. Swallowing more difficult than ever, lower extremities very stiff, and the patient every now and then asked to have them bent. The patient entreated me to relieve him; and to remove those catchings in the breath, which threatened him with suffocation; he said that if I could do this he should be well, for whilst they were absent he felt no pain whatever. Convinced that the cerebro-spinal system was the seat of the disease, I determined to increase the secretions from the alimentary canal, over which most of the ganglia preside. I prescribed four drastic bolusses, composed of gamboge, aloes, scammony, calomel; six grains of each, in a bolus.

Whilst I was deploring the insufficiency of the art, in a disease which after all, did not obviously present any thing incurable about it, since there was no disorganization, the following idea struck me: these convulsive motions, I said to myself, are nothing but a hidden and involuntary contraction of the diaphragm; which produce, by means of association, convulsive contraction of the spinal and expiratory muscles, and which kill by a true asphyxia, when this contraction has become to a certain degree permanent. Well! let us compel this muscle (the diaphragm) to follow the regular impulse of a will directing it; let us remove it from the controul of this convulsive action; it is im-

possible that it can be subject to two stimuli at once; the most powerful will prevail. Well persuaded of the truth of this idea, I placed myself before the patient; I ordered him to take deep inspirations, as fast as possible, but in regular succession, and in order to assist in this painful exercise, I kept time by an alternate elevation and depression of the hands. The success exceeded my most sanguine expectations; the convulsive motions which came on before every minute did not appear till after an interval of half an hour, when the patient, fatigued with the same position, begged me to allow him to change, and relax his measured respiration.

New trials were attended with fresh success. All the night was spent in this fatiguing exercise.—Four men relieved each other in making before him the signs which I shewed them; in fine, the patient reaped the fruit of his courage and confidence, he enjoyed quiet sleep for two hours.

5.—Very perceptible amelioration; convulsive motions only come on after long intervals, and dissappear as soon as recourse is had to performing respiration in the way I have mentioned. The patient himself felt better; he rose in order to walk up and down the chamber for a moment.

6.—Continues to get better; all the motions of the body are more free; the muscles of the neck are no longer painful; their voluntary contraction is much easier than that of the other parts of the trunk. Skin moist; pulse natural as to frequency; deglutition still difficult, and the patient only able to take small quantities at a time: three hours sleep after measured respiration for a long time continued.

7.—I was witness to a fit of coughing, which renewed all my fears, and I advised him to be undressed and placed in a chair. Whenever he attempted to lift himself, convulsive stiffness of the right inferior extremity came on, and he fell back in his chair; convulsive twitchings, of long duration, accompanied with a sense of coughing, cold sweat, and fainting. He was thought to be dying; fresh water was thrown in his face; a hat was moved up and down before his face, like a fan; he came to himself again, but could not move the right lower extremity, which he begged might be bent for the purpose of diminishing the numbness. Two paroxysms, something similar to the first, but less violent than it, took place during the night.—Several stools; continuation of the respiratory motions according to time; purgatives to be continued.

8.—Manifestly better; convulsions rare; drastic bolus every five hours; very copious alvine evacuations.

9, 10, 11, 12.—Still continuing better; more convulsions; dorsal portion of the spine, and the jaws still preserve a little of their stiffness, all medical treatment discontinued.

20.—Quite convalescent.

CASE 2.

By M. J Ch. GASE.

Wound of the hand; trismus and tetanus; opium opium and phosphorus alternately; bath, amelioration, gradual disappearance of the totalic symptoms; cure.

HAMON (MATHEWIN) ætat 19 years, native of SAINT SAUVEUR, canton of MOZON, gunner to the 54th regiment of line, lost 2 fingers of the battle of WAGRAM. --He was admitted on the 2d of August to the Hospital de la Charite, at VIENNA, attacked with a considerable trismus, and a general tetanus. Notwithstanding the violence of the trismus, deglutition was not completely impeded, and I was able to administer to him some phosphorous, which I had tried once before in a similar case, but unsuccessfully. I gave it in a white tincture, alternately with opium. At first I prescribed a grain of phosphorus once in 24 hours and I gradually increased the dose to four grains; opium taken at the same time was also pushed by degrees to 15 grains a day. Besides these a warm bath both morning and evening. After the lapse of twelve days, the trismus and stiffness of the limbs disappeared and deglutition became easier; light nourishment was given him, and convalescence commenced; it was long, and the patient remained weak and feeble for a long time. The suppuration of the wounds, which was checked in the height of the disease, returned, and with very good symptoms. Cicatrization soon followed, and the person left the hospital on the 10th of October to join his regiment.

REFLEXIONS.—Dr. Haren, physician in chief to the army, which was lately in Catalonia, was an eye witness to the fact which I have just related. I will add the phosphuretted drink which I employed in this case was prepared under my own direction, and I have often administered it myself to the patient in my visits; I do not wish, however, to draw any inference from this one case, neither as regards the nature of traumatic tetanus, nor the properties of phosphorus in this disease.

In one of the late sittings of the ROYAL ACADEMY of Medicine, the subject of tetanus was discussed, and a paper on this complaint was read by Doctor TAURE, in which the author, after deploring the inefficacy of the most, powerful remedies in tetanus, proposes the trial of inhaling moderate quantities of pure carbonic acid gas, in order to induce a state of asphyxia.

These ideas had already been communicated by this physician to other Medical Societies; but, as no particular fact has been related to elucidate the suggestion, it may be presumed that it is a vague opinion, justified neither by experience or analogy.

EXPERIMENTS ON THE TRANSPLANTATION OF ANIMAL SUBSTANCES.

By DOCTOR DIEFFEN-BACK, OF BERLIN.

(From Grafe and Walther's Journal der Chirurgie, April.)

I have been for many years past in the habit of making experiments on the transplantation of parts of the body from one animal to another. My object was to ascertain by experiment how far parts separated from the body might be made to grow again, and in what manner this might be most easily effected. The experiments were made in different places, and at different periods of the year in a great variety of forms.

I made them for the most part upon birds, in which the power of reproduction is most observable, and the success which attended many of my experiments led me to make further researches in this interesting field of inquiry.

It is well known that horny substances, such as the spurs of cocks, will readily grow to the living parts of other animals; I ascertained by experiment some years ago that the same phenomenon takesplace with respect to the hairs of animals; and I have more recently ascertained that feathers will grow in the same way. Other parts separated from the body seldom remained long after transplantation; many parts did not unite at all, as, for instance, the tails cut off from puppies and kittens, though I have frequently repeated the experiment on whole litters of these animals.

First Experiment with Feathers.

I took away from a pigeon twelve feathers, which were in different stages of growth; the least advanced were just appearing over the epidermis, and the blume was still included in the horny sheath; the oldest were completely developed, the quill hardened, and the gelatinous matter in the inside dried on the pith. Some of these feathers were taken from the neck, others from the back, tail, &c. In the youngest feathers that part of the quill which joins the cuticle from the laceration, and abstraction of the epidermis (a portion of which should always be taken in separating young feathers), was immediately filled with blood, and serum. In place of each of the feathers taken away I planted one of a chicken. The transplanted feathers were as various in shape as those which had been plucked out, and to prevent the possibility of confounding them, I had selected a black chicken, as the pigeon was of a light colour.

The feathers stuck in consequence of the extravasation of blood in the tube which joins the cuticle; and the swelling which soon took place in the cuticle gave a faster hold to the feathers, especially to the flag feathers.—The next morning the swollen and reddened cuticle formed a little lump at each feather; three of the feathers had already fallen off, or rather seemed to have been forced out by the swelling, their tubes not being sufficiently deep. On the following day I took out some of the oldest, which had undergone no alteration, no union having taken place. In the younger ones which had fallen out, the horny sheaths were shrivelled up, and the gelatinous matter was dried into a dark ropy mass. On the tenth day all the feathers had fallen off except three; two remained on the rump; the third was a flag-feather. The following are the appearances which I observed in making this experiment. The skin surrounding the feathers was very thick and swollen. This swelling increased, and in a day or two assumed a bluish red appearance. When the wings were held towards the light, the sheaths of the feathers appeared more dark and dry than

usual, especially towards the upper end; no union was observed. On the eighth day I thought I observed a fluctuation at the end of the feather; I let out a considerable quantity of bloody matter with the point of the lancet; the abscess, however, did not communicate with the tube of the feather which joins the cuticle, but was in the cellular tissure between the muscles. The swelling, after this, abated; the horny sheath appeared after some days clearer, and in consequence of the increased suffusion of blood, redder and more distended. A little opening being made with a fine needle a small quantity of blood gushed out. From this time the growth and developement of the feather went on daily, and at the end of a few weeks it was completely formed. I took out this feather shortly after, and found a little bloody, gelatinous matter at the end of it; it adhered firmly to the cuticle.

This experiment, which presents no difficulty, provided you can prevent the bird from plucking out the transplanted feathers, I have frequently repeated, and always with the same result; of twelve transplanted feathers two, or at most three, generally grew; the others either fell out, or though they appeared to take root at first, were afterwards forced out by newly formed young feathers.

Second Experiment.

I made several tolerably deep wounds in different parts of the body of a young fowl, and planted in them six young feathers of a pigeon. Strips of adhesive plaster were placed by the sides of the quill. Within a short time, however, all the feathers the quills, of which had a dry and shrivelled appearance, and which contained only a little brown gelatinous matter, fell out; only one of them, situated on the rump remained, and grew afterwards to its full size.

Third Experiment.

I have frequently made similar wounds with a trocar in puppies and rabbits, and inserted in them young feathers of fowls, pigeons and sparrows. In general, a considerable inflammation of the skin ensued, matter formed, and the feathers fell out. Only two feathers of a young pigeon remained on the back of a rabbit, and appeared as if they would grow. At the end of fourteen days I took them out, and found the gelatinous matter in the upper part of the quill dried up, and a little bloody serum in the lower end.

Fourth Experiment, with Hairs

I made some punctures and slight cuts in different parts of the body of an old pigeon, and planted in them the bristles of a cat and a wild rabbit. I made use of strips of plaister to fix the hairs more completely in their beds. A swelling appeared soon after at each spot where the hairs had been planted. On the fifth day, I took out several hairs which did not seem likely to grow; the roots were pointed and dried up, and there was a small dry scar in the skin.

Of twelve transplanted hairs only four grew, all near the rump of the animal.

At the end of four weeks the pigeon was killed. By accurate anatomical investigation, I found the roots of the hair were surrounded with a small portion of thickened cellular tissue; by the aid of a magnifying glass, some minute threads could be discerned at the points of the hairs, which had become thinner. These experiments were frequently repeated with the hairs of other animals and with nearly the same results; the following were the most successful.

Fifth Experiment.

A bunch of feathers was cut from the back of a pigeon within an inch of the skin; a long thick needle was carried through each feather, till the point penetrated the extremity, and reaching the skin of the bird produced a degree of pain which indicated that it had gone far enough.—Through the passages made in this way I introduced the bristles of a kitten till they reached the little wound which had been made with the needle; I then cut off the hairs even with the stump of feathers. Most of these hairs grew, owing probably to their being completely protected from all disturbance. In fourteen days some of them had grown out about half a line beyond the edge of the stump of feathers.—I could not take out one of these feathers without bringing the hair along with it, the latter having taken firm root in the deep puncture which had been made with the needle.

Sixth Experiment.

The bristles of a cat and a dog were transplanted to the back of a rabbit with the usual results. Five out of twelve hairs grew; the roots of the others either dried up, or a small abscess formed at the spot where the hair was planted, in consequence of which it fell out.

Seventh Experiment.

I made an experiment with hairs on myself. In six small punctures, which I made with a cataract needle, shaped like a lancet, in my left fore-arm I planted some hairs which were taken from the eye brows of a friend, and secured them with strips of adhesive plaster. For some days I felt a little itching at the part and a small inflamed circle appeared round each hair; two dried up; two fell off in consequence of the formation of matter, but the remaining two grew. I pulled them out some time after, experiencing the same painful sensation which is felt in pulling out the hair, and I found the roots perfectly natural.

Eighth Experiment.

I planted some hairs of my head in some punctures which I made in my left arm; I cut them off close to the cuticle. As the points of the hairs were not visible the next day at the red places, I concluded they had fallen out, and thought no more of them. Some time after, however, the cuticle scaled off at these places, in consequence of which the hairs came again into view, grew, and took firm root.

Ninth Experiment.

Hairs taken from the nostrils grew in the same way; with the same result I transplanted some grey hairs taken from the head of an old man to my arm; the transplanted hairs in this case acquired a darker hue.

Tenth Experiment, with Claws.

I took out the first phalanx of a pigeon's toe, and carefully separated the claw from it. I then plucked from the tail of the bird a young strong feather, and placed the claw on the bed of the feather, which was filled with blood and serum. The next day the claw appeared to be completely inclosed, the extravasated blood having dried over it. On the eighth day the point of the claw first appeared, and two days after the whole claw appeared above the cuticle, and on being touched fell out; the inside was quite hollow. The experiment appeared to have entirely failed. I observed accidentally, however, some few days after, in the same spot, a small white point, which I at first took for the upper part of the horny sheath of a new feather, but which, as it continued to increase, I discovered to be a new claw, the old one having been thrown off like cuticle. The young claw was at first soft, and of a whiter colour than the old one, but it hardened gradually, and became first of a yellowish, and at length of a brown colour, the old claw having been perfectly black. In the mean time, a young feather had grown again in the place of the other, and the claw was completely pushed out of its original situation, so that it stuck upon a portion of skin which surrounded the feather. At the end of a month I cut off the piece of skin on which the claw stuck; the wound bled freely, the skin being closely adherent to the root of the claw.

Eleventh Experiment.

The transplanting of the spurs of young cocks to the wounded surface of their combs is an experiment so well known, and which has been so often repeated, that I shall not dwell upon it. In many parts of Germany, as in Mechlenburg, for instance, the old women are very dexterous in castrating cocks, and in transplanting their spurs to their combs. The transplanted spurs often grow to the height of several inches.

In transplanting the spurs of young cocks to the feet of fowls, or pigeons, I succeeded best when I made a crucial incision with the point of a bistoury, half a line from the flat basis of the spur; I then planted it in a wound made in a similar manner in the foot of the other bird, and covered it with a circular piece of adhesive plaster.

I never observed any formation of matter, when the transplanted part did not take root.

I made a wound in a young pigeon, on the skin surrounding the root of the bill, and stuck upon it the spur of a young cock, which looked at first like a little corn on the foot. It did not appear to increase in the first week, but afterwards it grew very fast. The pigeon was killed a few months after, when a per-

fect union of the transplanted part was found to have taken place.

I stuck the spur of a very young cock, about the size of a millet-grain, on a wart which was situated on my left thumb, and which was half cut away. It grew very quickly, and at the end of a month it had attained a considerable size, when I cut off the wart at the root.

Twelfth Experiment, with pieces of skin.

I made a wound at the root of the bill of an old pigeon, while Dr. Clot, physician to the hospital at Marseilles, who has frequently assisted me in these experiments, cut off a piece of skin, of the size of four lines, from the wattle of a young cock. The piece of skin was united with the wound by strips of adhesive plaster. When the strips of plaster were removed, a few days after, the part had assumed a livid glossy colour, but it adhered firmly. Some time after the skin separated, and there was an appearance of a small red prominence at the part.

Thirteenth Experiment.

I scalped the upper part of a pigeon's head, so as to expose the parietes, a part of the occiput and os frontis being still covered with pericranium. A corresponding flap from the inner side of the thigh of a pig fourteen days old, was fastened to the wound by six sutures.—The edges of the wound seemed to be closely united to it by blood and lymph. After some days the threads, around which little swellings began to appear on the skin of the bird, were withdrawn, and appeared to be moist with lymph. The flap continued firmly adherent, and the bird was lively. At the end of eight days some fine bristles, which had been carefully shaved off the skin of the pig before the operation, made their appearance; they were about as long as a beard of three or four days growth.

On the tenth day I opened the left jugular vein of the pigeon; I suffered it to lose as much as would fill a table-spoon, while an assistant took two tea-spoonsfull from the carotid of a young pig. At the same instant the blood was introduced into the vein of the pigeon, and probably carried directly to the heart; the bird being seized with two successive convulsions, distortion of the eyes, geneneral stiffness followed in a few seconds by death. On opening it I found the right ventricle of the heart filled with blood; in other respects nothing remarkable.

Fourteenth Experiment.

The neck of a chicken four weeks old, was exposed by the excision of a piece of skin of the size of 2 inches, and a piece of skin taken from the inside of the thigh of a pig 4 weeks old, was introduced into the exposed surface. The flap of the skin appeared to unite with the cutis of the bird by the first intention. On the third day, upon making a small incision in the transplanted skin, no blood flowed, but a little serous fluid escaped. The skin separated on the 8th

Ninth Experiment.

Hairs taken from the nostrils grew in the same way; with the same result I transplanted some grey hairs taken from the head of an old man to my arm; the transplanted hairs in this case acquired a darker hue.

Tenth Experiment, with Claws.

I took out the first phalanx of a pigeon's toe, and carefully separated the claw from it. I then plucked from the tail of the bird a young strong feather, and placed the claw on the bed of the feather, which was filled with blood and serum. The next day the claw appeared to be completely inclosed, the extravasated blood having dried over it. On the eighth day the point of the claw first appeared, and two days after the whole claw appeared above the cuticle, and on being touched fell out; the inside was quite hollow. The experiment appeared to have entirely failed. I observed accidentally, however, some few days after, in the same spot, a small white point, which I at first took for the upper part of the horny sheath of a new feather, but which, as it continued to increase, I discovered to be a new claw, the old one having been thrown off like cuticle. The young claw was at first soft, and of a whiter colour than the old one, but it hardened gradually, and became first of a yellowish, and at length of a brown colour, the old claw having been perfectly black. In the mean time, a young feather had grown again in the place of the other, and the claw was completely pushed out of its original situation, so that it stuck upon a portion of skin which surrounded the feather. At the end of a month I cut off the piece of skin on which the claw stuck; the wound bled freely, the skin being closely adherent to the root of the claw.

Eleventh Experiment.

The transplanting of the spurs of young cocks to the wounded surface of their combs is an experiment so well known, and which has been so often repeated, that I shall not dwell upon it. In many parts of Germany, as in Mechlenburg, for instance, the old women are very dexterous in castrating cocks, and in transplanting their spurs to their combs. The transplanted spurs often grow to the height of several inches.

In transplanting the spurs of young cocks to the feet of fowls, or pigeons, I succeeded best when I made a crucial incision with the point of a bistoury, half a line from the flat basis of the spur; I then planted it in a wound made in a similar manner in the foot of the other bird, and covered it with a circular piece of adhesive plaster.

I never observed any formation of matter, when the transplanted part did not take root.

I made a wound in a young pigeon, on the skin surrounding the root of the bill, and stuck upon it the spur of a young cock, which looked at first like a little corn on the foot. It did not appear to increase in the first week, but afterwards it grew very fast. The pigeon was killed a few months after, when a per-

fect union of the transplanted part was found to have taken place.

I stuck the spur of a very young cock, about the size of a millet-grain, on a wart which was situated on my left thumb, and which was half cut away. It grew very quickly, and at the end of a month it had attained a considerable size, when I cut off the wart at the root.

Twelfth Experiment, with pieces of skin.

I made a wound at the root of the bill of an old pigeon, while Dr. Clot, physician to the hospital at Marseilles, who has frequently assisted me in these experiments, cut off a piece of skin, of the size of four lines, from the wattle of a young cock. The piece of skin was united with the wound by strips of adhesive plaster. When the strips of plaster were removed, a few days after, the part had assumed a livid glossy colour, but it adhered firmly. Some time after the skin separated, and there was an appearance of a small red prominence at the part.

Thirteenth Experiment.

I scalped the upper part of a pigeon's head, so as to expose the parietes, a part of the occiput and os frontis being still covered with pericranium. A corresponding flap from the inner side of the thigh of a pig fourteen days old, was fastened to the wound by six sutures.—The edges of the wound seemed to be closely united to it by blood and lymph. After some days the threads, around which little swellings began to appear on the skin of the bird, were withdrawn, and appeared to be moist with lymph. The flap continued firmly adherent, and the bird was lively. At the end of eight days some fine bristles, which had been carefully shaved off the skin of the pig before the operation, made their appearance; they were about as long as a beard of three or four days growth.

On the tenth day I opened the left jugular vein of the pigeon; I suffered it to lose as much as would fill a table-spoon, while an assistant took two tea-spoonsfull from the carotid of a young pig. At the same instant the blood was introduced into the vein of the pigeon, and probably carried directly to the heart; the bird being seized with two successive convulsions, distortion of the eyes, geneneral stiffness followed in a few seconds by death. On opening it I found the right ventricle of the heart filled with blood; in other respects nothing remarkable.

Fourteenth Experiment.

The neck of a chicken four weeks old, was exposed by the excision of a piece of skin of the size of 2 inches, and a piece of skin taken from the inside of the thigh of a pig 4 weeks old, was introduced into the exposed surface. The flap of the skin appeared to unite with the cutis of the bird by the first intention. On the third day, upon making a small incision in the transplanted skin, no blood flowed, but a little serous fluid escaped. The skin separated on the 8th

day, in the form of a hard crust, but several bristles had made their way to the cutis of the cock, which was reproduced under the flap, and took fresh root.

Fifteenth Experiment.

The upper part of the nose of a young wild rabbit was cut off, and, after a considerable quantity of blood had flowed from the wound, was brought into contact with the wounded surface, by means of a fine suture and a piece of gum plaster. On the following day I found the whole snout very much swollen; the tip of the nose, which was left uncovered, was dry and hot. On the 5th day I removed the plaster; a good deal of matter was discharged from the edges of the wound at the back of the nose, in consequence of which the breadth of a few lines of the part of the nose which had been cut off was destroyed; the cavity, however, was soon filled up with new granulations; the slough at the point of the nose was in the mean time thrown off, and a complete union of the separated part took place.

ROYAL ACADEMY OF MEDICINE AT PARIS.

Sitting of the 24th of February.—M. RULLIER presented to the Academy a stomach from the internal surface of which, twenty-four fungi projected. These excrescences existed in the mucous membrane, and were formed out of it.

The Secretary read, in the name of M. JULIAN FONTENELLE, the case of an individual who had only one kidney. Occupying its usual situation, this kidney was five times larger than in the healthy state.

Sitting of the 20th.—M. RICHERAND occupied the time of the meeting with an account of an operation for strangulated femoral hernia, in which he had an opportunity of proving the excellence of the instrument commonly called COOPER's hernia knife, although the president of the meeting M. DUBOIS had publicly used it fifteen years before the English surgeon published a description of it.

HOSPITAL REPORTS.

GUY'S HOSPITAL.

On Tuesday (May 25th,) an amputation was performed at this Hospital, (we will give the case in our next) and after the operation some valuable observations on compound fractures were delivered in the operating theatre by Sir A. Cooper. The accidents admitted this week, are a fracture of the tibia and fibula, injury to the spine, wound of the thigh just above knee-joint from a sharp instrument, fracture of the humerus, and fractured ribs.

ST. THOMAS'S HOSPITAL.

William H. ætat 31, labourer, was admitted into Isaac's Ward, April 28th, 1823, with stone in the bladder. The patient states that a year and a half ago he was seized with pain on making water, and that his urine which was flowing in a full stream suddenly stopped. From this time he has always been subject to the same symptoms in a greater or less degree, although they have never been so violent as to prevent him following his occupation. Has also frequently voided bloody urine,

particularly after hard work. His water contains clots of white matter having the appearance of mucus. His general health is in no way affected, and the patient is of a strong amd robust constitution. On being sounded it was found that there was a stone in the bladder.

Friday, May 21.—The patient underwent the operation of Lithotomy, his bowels having been previously evacuated by means of common enemata. A stone of the size of an a'mond with the shell on, soft and rough at one point was extracted from the bladder in the usual way; in its removal a small portion of the stone was broken off. The prostate was divided with a gorget cutting on one side only. Very little blood was lost during the operation.—The operator was Mr. Green.

22.—Slept about an hour during the night—has had no bleeding whatever. Tongue white but moist—Thirsty—Pulse 90, strong—No pain in any part excepting the wound, and then he only feels a smarting when the water passes off. Is ordered to be kept very quiet, and allowed milk, gruel, or tea.

23.—Felt perfectly easy during the night, but did not sleep—A common injection was administered which procured one evacuation.

24.—Slept last night—Pulse 90, still full, and tongue dry.

25.—Injection repeated to day. Feels very well. Urine passes the natural way.

26.—Pulse 84, Strong—Tongue white—Thirsty — Free from pain—Appetite good—Allowed no animal food, but takes tea, milk, or rice-pudding. Sleeps very well.

27.—Still keeps his bed, but feels quite easy—Has very little fevera nd is rapidly recovering.

The accidents admitted this week are a fracture of the tibia and fibula, injury to the feet and and legs from a fall, fracture of the condyles, fracture of the neck of the scapula, and do. of the fibula.

WESTMINSTER HOSPITAL.

Saturday, May 22.—James Oakley was admitted to this hospital, with a concussion of the brain, owing to the fall of a building under which he was working; he was senseless when brought in, from the effects of the blow, and the pupils of the eyes were not affected by light.

Fourteen ounces of blood were immediately taken from the arm, in a full stream; and in one hour after the accident he was perfectly sensible, only complaining of a sensation of numbness in the head: the pupils now contracted and dilated, though not very freely and he spoke in a collected and composed manner. Pulse 68 in a minute.

℞ Infus. Sennæ ℥jss
Magnes. Sulphatis ℥jss m ft Hanstus, statim sumendus, et tertia quaque hora repetendus, donec alvus responderit.

Two hours after the accident, a few drops of blood issued from the nose. Pulse 70 and full.

Sunday 23.—Pain in the head, and restless. The patient procured but little sleep in the night. Bowels open from the draughts.

Pulse 80, strong and full. Repeat the bleeding to 16 ounces.

Monday, 24.—The patient slept more during the night and is in all respects much better than yesterday. Pulse 75.

Tuesday, 25 — The same as yesterday.

Wednesday, 26.—A slight degree of pain is still felt in the head. Bowels open. Pulse 80.

The accidents admitted to the hospital this week are besides that of James Oakley, a man with a fracture of the thigh; and the cases of two girls, in one of whom the metatarsal bones of the four larger toes were fractured, from a cart having passed over them, and in the other the knee joint was injured, from a fall.

MIDDLESEX HOSPITAL.

May, 25.—The accidents admitted into this Hospital since our last report are the following: John Carlett, Mary Gale, and John Jenkins, with fractured legs, Charles Callan with an injury of the head from a mill by which the greater part of the left ear was removed; John Warren with a fractured Humerus and Clavicle, and Henry Powell with a slight injury of the leg. A few other accidents have also been admitted but from their uninteresting nature, it is hardly worth while to detail them. No operations have been performed.

* Continued Page 319

ST. GEORGE'S HOSPITAL.

Wednesday, May 26—No operation of importance has been performed at this Hospital, since our last report.

LITERARY INTELLIGENCE

In the press and shortly will be published, an enquiry into the probable cause of Puppyism, or a comparative statement of the quantity of wine drank in the Apothecary's shop of St. Thomas's Hospital, and in the Wards of the same Institution.

NOTICE TO CORRESPONDENTS.

E. R. L. is in the secret.

W. X. is too impatient.

PHOCION'S communications are highly valued. We again request his address.

F. W.'s observations are but too well deserved. The cause of the evil could not have been overcome.

W. W. will find a letter on Wednesday next at the place he mentioned.

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